The Chronicle
of the Early American Industries Association, Inc.
Volume IX December, 1956 Number 4

HAND TOOLS FOR MAKING FISHHOOKS

Raymond R. Townsend

The small simple device of a fishhook has played an important part in the welfare of man since the dawn of history either as a means to fill his ever continuous need for sustenance or provide him with relaxation. The latter is commonly referred to as "sport" by which man feels he is pitting his skill against that of nature. Not always does he succeed, but succeed or not, from this sport we certainly have heard, (especially from one of our former residents here) arise some of the highest forms of imagination, excuses, and tall tales ever related. Quite often the fishhook is the recipient of these excuses; it was either too blunt, too large, too small or too curved. But whether it was the cause or not, mankind still depends on this barbed, pointed and curved hook for his pleasure or his meal.

The making of fishhooks was a highly commercial and developed craft in our early period of history. The tools were simple but effective and those occupied in manufacturing of fishhooks were skilled craftsmen. They were a good sales item in the colonies and we find numerous advertisements concerning them. In the New York Mercury, Sept. 2, 1765, William Sheward of Pennsylvania, a needle maker, advertised that he made " . . . all kinds of Fish Hooks . . . and sold . . . by Watson and Murray, in New-York: They are equal if not superior in Quality to any imported from Europe; and always free from Rust, which by the frequent Damps in Vessels, European made are always liable to." In 1776, Joseph Plowman, a Pin-maker in New York, advertised in the Constitutional Gazette, of June 22, that he made "fishing hooks" among other items. Even Anne Hume, who ran a sort of "department store" in Burlington, New Jersey, advertised that she had, among numerous fishing items just imported from London: " . . . Best kirby hooks, untied, Best round ditto, common hooks, ditto, . . Common hair lines, Best ditto, Best with kirby hooks, . . Common tied hooks, Best kirby hooks tied, . . " (The Pennsylvania Journal, No. 1137, Sept. 20, 1764). In the eighteenth century, at considerable expense, a wire-mill was set up at Dedham, Mass., for the use of the card & fishhook makers of Boston. (J. Leander Bishop, *A History of American Manufacturers from 1608-1860,* Vol. 1, p. 497)

One would probably believe that such a small item made by hand would be rather expensive but quite to the contrary they were not. Francis Jerdone's, Merchant of Yorktown, Virginia, account book 1750-1752 provides us with a good comparison. Mr. Jerdone sold most of his fishhooks at 7½ pence a dozen or 4 pence a half dozen. In comparison he sold lead pencils for 3 pence each, thimbles for 2 or 4 pence each, a gross of steel shoe tacks for 8 pence, a razor at 7 pence, pair of scissors at 9 pence, penknife at 3½ or 4 pence each, steel shoe buckles at 12 pence, a slate for 8 pence, and 325 needles at 16 pence per hundred.

Two sources of information of the eighteenth century, M. Diderot, *Recuiel de Planches,* Tom VIII, Paris 1761 and M. Bertrand *'Descriptions des Art et Metiers, Traité des Pêches,* furnishes us with excellent drawings of the ingenious tools and method of use. Although the tools are slightly different their basic principle is the same and were employed by the English and by our early American craftsmen. Up to the middle of the 19th century there appears to have been little change in this method of fabrication until the invention of a machine by Chauncey O'Crosby, of New Haven for making fishhooks and sewing needles which converted the raw wire into the finished article at the rate of 150 per minute. (Bishop, vol. II, p 510)

The fabrication of fishhooks consisted of six successive operations: 1. cutting the wire into proper lengths; 2. barbing; 3. pointing; 4. curving; 5. flattening the head and making eyes; and 6. tinning or oiling and tempering.

The necessary tools consisted of a bench for each worker, different blocks, barbing tools, bending tools, pincers, hammers, hand anvils, chisels, files and vices.

The iron wire was purchased already prepared and did not need any additional drawing, annealing, or redressing. It was chosen for its sharpening qualities and thinness. Care was taken that it was not too brittle which sometimes was difficult to determine until the flattening and eyeing operation.

Two methods were employed in cutting the wire into the correct lengths. Plate I, *Traité des Pêches,* fig. 17, shows the cutting block with the chisels "a" of tempered steel, 2 inches wide and 1½ inches high, and rectangular pieces of iron "b" which I shall call the "stop", 2 inches wide and 2 inches high. These two objects are placed on the block at varied distances from one another according to the length of hooks that are to be cut. The parcel of iron wire is placed on the chisel "a" and brought against the "stop" "b" and struck with a soft headed

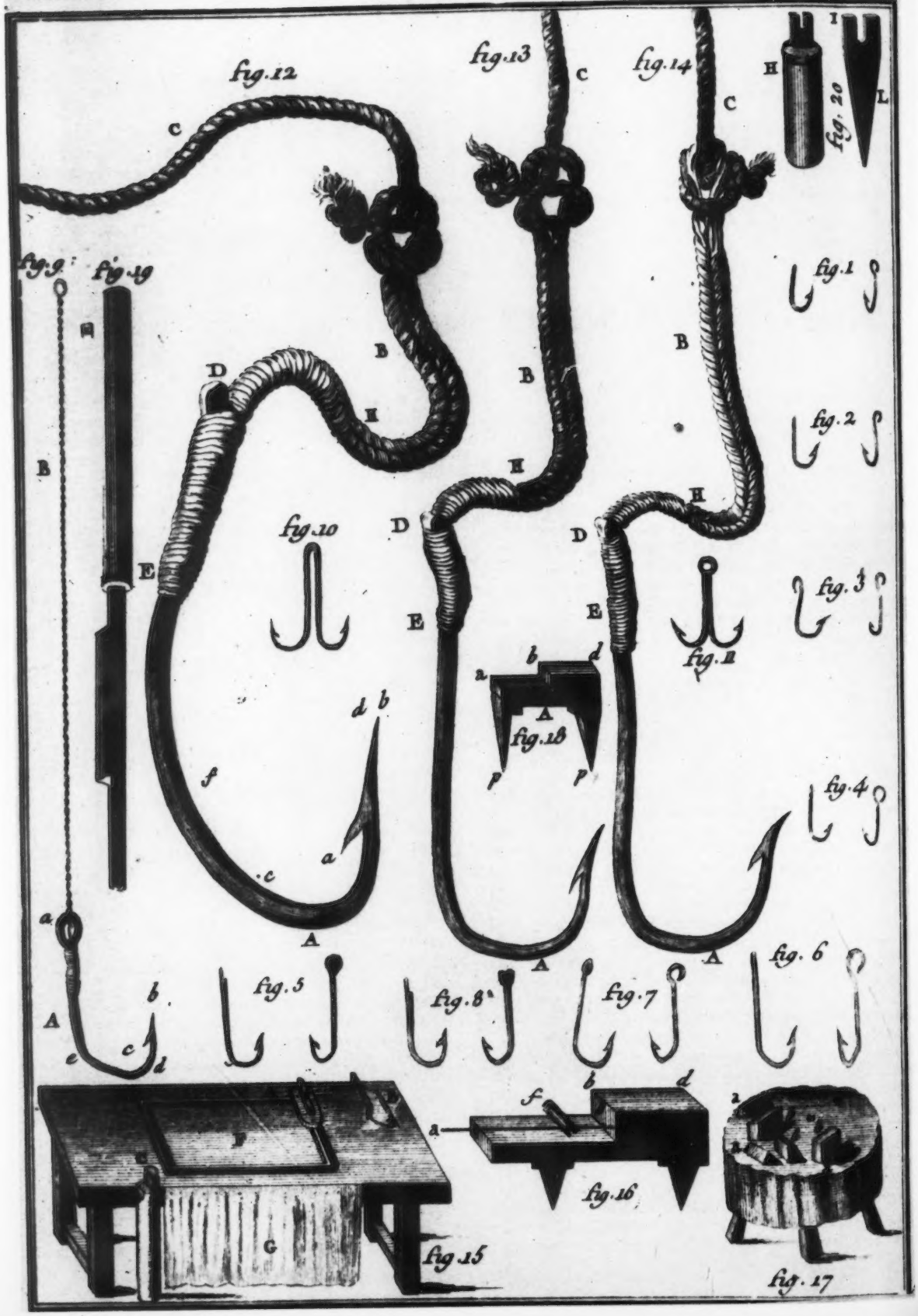
fig. 12
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fig. 15
fig. 17

hammer cutting the wire into the desired length.

Diderot, Plate XVIII, shows in fig. 1, the iron wire cut into a length sufficient to make two hooks of equal size. It is then flattened in the middle, as is shown in fig. 2 and 3, and cut in two when both ends of the wire have been barbed and pointed. Fig. 1 in the top drawing of the workshop shows the workman performing this operation of flattening the wire. This latter method was employed by the famous fishhook makers of Limerick, Ireland as late as the middle of the 19th century. (Tomlinson, Charles, Cyclopedia, London, 1851. Vol. I, p 670)

The principle of barbing is the same although the two barbing tools are slightly different. *Traité des Pêches,* plate I, figs. 16 and 18 shows the barbing tool for various size hooks. This is of iron and is attached to the bench by its two points "pp". The top consists of two tiers: "ab" the lower part and "bd" the head or upper part which is covered with a steel layer and serves as a hand-anvil. A groove is notched in the lower part and extends by a drilled hole into the upper iron portion of the tool at "b" to "c". This tool is secured onto the bench, fig. 15, "A", and a short distant from it is fastened the knife rest "B". The barbing knife, fig. 19, has an all over length of 22 inches with a handle "E" of 12 inches. The blade "D" is flat underneath and beveled to its cutting edge "D". The worker places the tip "M" under the knife rest "B" (fig. 15). The bench, fig. 15, is provided at the middle with a square "F", former by four strips of wood an inch in height nailed to the table. The worker places the cut parcel of iron wire in this square. With his left hand he takes a bundle of the wire and with his thumb makes them slide over the flat part of the barbing tool into the groove "ab" and into the hole "c". About a third of the thickness of the wire extends above the groove. With his right hand the worker then places the end of the barbing knife in the knife rest, lays the cutting edge flat over the wire and presses obliquely thereby cutting a burr into the wire and thus forms the barb. This work requires skill so that the wire and the cutting tool are not damaged. An apron "G" is nailed to the table and the loose end is fastened around the worker, as he barbs a wire he lets it fall into this apron and with his left thumb fixes another wire into the groove. This operation is said to have been performed so fast that one can hardly describe it.

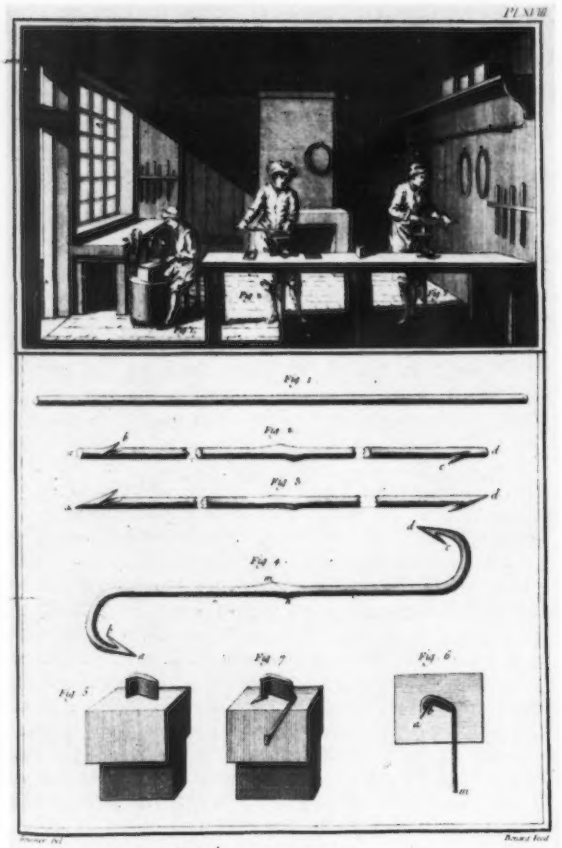
Diderot shows the barbing tool in Plat XIX: fig. 1, top view, fig. 2, side view with its lower part that is placed in the vice; and fig. 3, front view. The cutting knife is fastened to the barbing tool by a wing-nut at "a". In fig. 3, "d" is the knife rest or "stop" which enables the barb to be placed at the correct length from the point. The steel bar "b" and "c" has a hole into which the wire is placed #1 and comes to rest against the back part of the tool, #2 shows the barb cut. The workshop view in plate XVIII, fig. 2, shows the workman performing this operation. Tomlinson in 1851 described the barbing tool as "a small standard" 2 inches high, 1 inch long and ½ inch broad fastened to a bench. The upper face has three holes into which the ends of three wires are placed.

In cutting the barb on larger hooks it was necessary to use a cold chisel rather than the knife. In *Traité des Pêches* the worker straddles a long flat rectangular bench (not shown) upon which he has fastened the large barbing tool "B", fig. 16, plate 1; places the wire in "a, b, c," and cuts the barb with a cold chisel "f". Diderot shows the larger hook barbing tool in Plate XIX; fig. 4, the upper jaw; fig. 5, the lower jaw; and fig. 6, the tool assembled. The upper jaw is equipped with a steel spring when placed over the lower jaw of the tool. In fig. 6, "D" is the "stop" against which the end of the wire rests when in the grooves of the upper jaw. The cold chisel is "C" and #2 is the barb cut. In order to hold the wire firmly in the tool, the iron loop "FG" is placed around the tool and has attached to it at "G", a cord that ends on the floor in a pedal, which the worker presses as he barbs.

The next operation is pointing the hook. In *Traité des Pêches,* (fig 15) at the side of the bench is a piece of hard wood "C" that is used to support the wire as it is filed. It is notched at the head with several indentations and with an iron plate at the top. Smooth pincers and a file fastened in a wood handle complete the tools needed. When the hooks are barbed and placed in the square "F" of the bench the worker then passes to the side of the vice "C", takes these barbed wires, one after the other, in his pincers holding it by the opposite end to that of the barb, lays them over the lower notch of the vice and flattens the point with a file. By holding the barb up and then over the top notch of the vice, he points it, and redresses the size from the point to the barb. In order to hold the file, which has a handle 13 inches long, he straps it parallel to his arm. Large hooks are placed in a jaw-bone vice, and are pointed with a file the worker holds in both hands. In the larger hooks the barb is also filed due to the bluntness resulting from the cut of the cold chisel. Fig. 3 in the workshop view in *Diderot,* Plate XVIII shows this operation.

Curving is the next operation. In *Traité des Pêches* the small and medium hooks are curved by the use of the curving tool "H" (fig. 20, Plate 1) made of iron with a wood handle. The tool is held in one hand and with a pair of smooth pincers holding the head of the hook, the barb and point are placed in the opening "I" and with a half turn of the hand the worker gives the hook its necessary curvature. He then drops the hook in his apron and curves another. One single worker could point and curve in his work day 2,000 of the smallest dabfish or merland hooks or 200 of the larger hooks used for ray fish. To curve large hooks a curving tool that is made all of iron "L" (fig. 20, Plate I) is used. Its pointed edge is driven securely into the large hook bench and the same procedure is employed as for the smaller hooks.

Diderot shows a curving tool in Plate XVIII; fig. 6, top view; fig. 7, view with hook curved; and fig. 5, the curving tool. The block is of wood with the upper curving piece of iron of which the upper curved portion is shaped the same as the curve desired for the hook. The end of the iron has a pointed edge so that the barb will fit around it. The head of the hook is held by pincers and drawn around the iron. The lower part of the block is placed in a vice to hold it. Tomlinson states that this is the method used by the English in the middle of the 19th century, except that the curving piece was made of brass. Tomlinson states that a man can bend about 60 hooks a minute.



Pêche, Fabrique des Hameçons

Flattening or making eyes at the head of the hook is the next operation. The eye would be made by the use of the pointed end of a hand anvil but the eye hooks appear not to have been as well liked as the flattened shank type. One stroke only of the hammer was required to flatter the heads of small and medium hooks on a hand anvil whereas larger hooks required several. It is during this operation that the quality of the wire is revealed, if it splits into fibres it can sometimes be salvaged by annealing the flattened portion only. You will note that in *Diderot* this operation of flattening is accomplished at the start of the operation. Tomlinson also states that the hooks were flattened to make a hole for the line or leader.

The next operation is that of cleaning, oiling and tempering or tinning the hooks. In *Traité des Pêches* the hooks are cleaned by sifting the hooks in sand and then are heated and tinned. In *Diderot's* (plate XVIII) workshop drawing in the background is a fireplace in which a sort of grill or oven is placed over the fire upon which an iron sheet covered with hooks was placed. When the hooks have turned red they are thrown into a vessel filled with oil so as to temper them.

These operations in the fabrication of fish hooks can be compared to the nineteenth century method from an article in a book by Henry P. Wells, *Fly Rods and Fly Tackle,* published in 1883, which gives an excellent description of the method at that time:

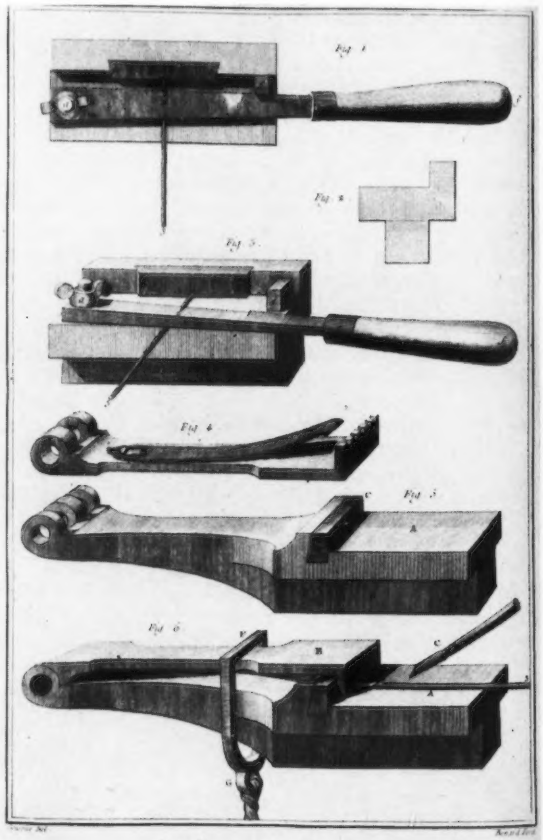
Round steel wire was fed through a hole in a steel block until the cut met a stop. It was then sheared off at the hole-end of that length, and the process repeated. The length required for various sizes and patterns of hooks was determined by the distance between the hole and the stop.

A single cut piece was then laid on an iron bed, and a steel tool with a chisel-like cutting edge was applied, the bevel edge being up. This cut incised the barb. The bevel of the cutting tool determined the "rankness" of the barb — the degree of angle between it and the body of the hook.

They next annealed the wire by application of heat. The point tip of the wire was placed under a drop hammer which struck that end in such a way as to nearly or quite shear off the blunt end beyond the barb, to form the hook's point. Two or three strokes of a hand file smoothed off that cut side of the point and further shaped it.

The bend was made by laying the hook on a block which has a peg against which the point was seated, and a raised form against which the softened wire was bent. This raised form on the block would be different in shape according to the type of hook to be made.

The hooks were then hardened by putting them in a sheet-iron dish and heating them in an oven until they



Pêche, Fabrique des Hameçons

were cherry red. When the worker considered them red enough the whole batch were then placed in oil. They came out brittle and hard.

The hooks were then drawn to a spring temper by being placed in a pan full of sand that was heated to produce the proper temperature. The worker stirred those around, judging by the appearance of the steel when the proper heat was reached. When he believed that accomplished, he removed the batch and allowed it to cool.

It is interesting to note that the curvature of the hook was of concern to the fishermen of the 18th century as well as the 19th and 20th centuries. Some 18th century fishermen would buy the hooks straight without a curve then driving into a block several nails in such a way so as to form the curve they so desired, place the point of the hook between two nails and force it to take the shape outlined. Some fishermen scoffed at this procedure, claiming that the curvature of the hook had no affect on the success of their work. In the 19th century a Mr. H. C. Pennell of England wrote a book called the *Modern Practical Angler,* published in London in 1870 in which he lays down the most important consideration in the forms of hooks and how they function. He analyzed and criticized the different hook shapes.

Even the point of the hook was consideration for "hot" debates since some liked a straight point and others wanted it to be bent in a little towards the interior part of the hook.

Kirby and Limerick, 18th century hooks, are still designations of type of fish hooks manufactured today.

One will note in *Traité des Pêches* the different type of hooks made with different curvatures, point of barb, and straight and curved points.

We are familiar with the eye type hook of today but are perhaps unaware that various flat headed hooks can also still be obtained such as knobbed, flattened, marked tapered, tapered and flatted needle eye heads.

Some Notes on Rope Making

The name Rope generally designates the larger type of cordage that exceeds an inch in diameter, although. the principles of formation are much the same for cordage of all sizes. The first process consists of twisting the hemp into thick threads called *Rope — yarns,* and this is performed with various kinds of machines. The common method of spinning rope-yarns by hand was performed in the rope-ground or rope-walk, an enclosed slip of level ground, sometimes 600 feet or more in length. At one end of this ground a type of spinning wheel was set up, which gave motion by a band, to several small rollers or whirls. Each whirl had a small hook formed on the end of its axis next to the walk. The spinner was provided with a bundle of dressed hemp, laid round his waist with the bright or double in front and the ends passing each other at his back, from which he drew out a sufficient number of fibres to form a rope-yarn of the required size. After slightly twisting them together with his fingers, he attached them to the hook of a whirl. The whirl was then set in motion by turning the wheel and the skein was twisted into a rope yarn. The spinner walked backwards down the rope-walk, supporting the yarn with one hand which was protected by a wetted

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ABNER TAYLOR

BY LAWRENCE B. ROMAINE

On August 5th, 1893, Mr. Wellington Smith, Treasurer of the Smith Paper Company of Lee, Massachusetts, wrote as follows:—

"My dear Doctor Taylor:

I send you by express today the old account book you request. I think you will find them interesting reading. You will notice in your Father's book 'dollars, dimes & cents' in columns under each other, and many other curious things. The book covers over eighteen years business — 1806 to 1824.

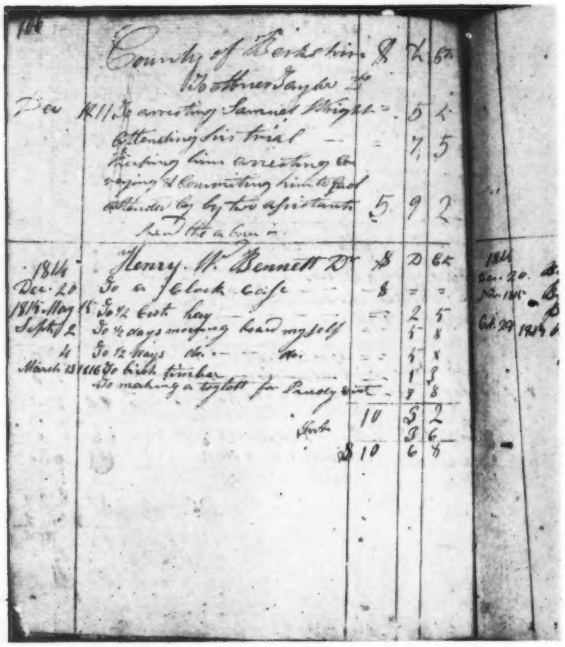
Sincerely yours,
Wellington Smith."

If it hadn't been for this letter tucked in the back cover of the old ledger, I probably wouldn't have again been tempted to try the patience of Chronicle readers with still another list of American hand manufacturers of this period. However, the satisfaction of being able to name the craftsman as well as his home town, was too much for me: — I read a few lines — and here they are. Some of you may say that since our Association is interested primarily in the *early tools* and their manufacture, my constant harping on the *products* shouldn't take Chronicle space; however, variety is the spice of life, and I think it even more interesting, as well as educational, to study the *many crops* of one small chisel, saw, plane and hammer. When, on top of all the examples of Yankee ingenuity that have been produced from one small tool chest, the cabinetmaker-carpenter-architect turns his hand to law and order to boot, then we have some interesting records which I have got to flaunt in the face of this atomic-crazy age of listless button pushing and premature old age laziness.

The illustration from one of the pages gives you a very clear idea of Mr. Taylor's versatility. Catching Samuel Wright for Berkshire County, arresting him, attending his trial, keeping him arrest(ing), conveying and committing him to goal, attended by two assistants, is a small chapter in 1811. The bill was $5.92 ($5./Dimes 9/cents 2/.) On the very same page, though in 1814, he produced a clock case (possibly a grandfathers), and besides other trivial accounts, also built a "toylett" for Prudy Smith. (I thought the same thing you did at first, but considering the bill for 7 dimes and 8 cents, I guess we are wrong. The toylett was more than likely a small pine jointed doll.)

We are familiar with the term "field bed," and know that it probably came from the fact that the canopy looks somewhat like a tent, but this is the first manuscript account I have actually seen it written in — "Field bedstead" — the being $2.17. And while we are on Taylor beds, I don't remember noting a "turn-up bedstead" before; could this be the original Murphy inner-door? We know the jointed four poster that folded up in the daytime, but I never actually saw one listed before — and surely not for $2.64. In another instance he "altered a bedstead to turn up," for $1.00.

Today in most cases, the cost of labor is higher than the materials used. In 1812, a fine old field bed cost only about $2.50 because the actual cost of timber was almost negligible — yet a fine turned post, hand carved



Page from Abner Taylor's Account book

bureau cost $13.00. The lumber for the piece had to be good, well seasoned, and there was quite a bit of it. Even a washing machine in 1815 came to $5.80 because it took a lot of pine to make one. This is a curious entry. Was this one like those of the 1850's we see illustrated in old catalogues with the poor worn out farmer's wife standing by it pulling and pushing a hand lever with a broad grin on her face? Was Abner Taylor way ahead of his time? How many did he make? Where are they? Have I missed one at Williamsburg, Sturbridge, Monroe, Shelburne or Richmondtown? Has Erwin Zepp an example waiting for us at Columbus?

From a pitch-pipe at $1.33 to an ink stand ("broke by Sylvanus Foot') at $1.17, the pages all contain oddments not usually found in the old general ledgers. The "frames for window curtains" must have been those delightfully carved pine top mouldings that hid the string or wire on which the curtains hung — and at .25c each how could the housewife lose?

Speaking of versatility, now that we have him shown up as a pretty good cabinetmaker, add a "large paper fire board." One could say that a mere fireboard might be one or two pieces of very thin pine lashed together — easy — but who painted the scenic wall paper? In this instance, is it possible that our craftsman also daubed a cow in a pasture with a setting sun in the background? On the same day (all right, call me a liar — maybe it was the next day) he produced a pair of deerskin gloves for .75c. Waggon boxes and cloaths horses follow in profusion at about .85c to .90c each. Between January and February 1811 he produced for Doctor Nath'nl. Thayer two vial cases, an instrument case, set and filed the (surgeon's) saws and fixing irons. (Fixing irons might be just one worse than button hole cutters — if you remember that meeting at Salem when the latter tools took up most of our time and almost ended in some really good fights. (I'm just throwing this in to see what might happen at Columbus.)

One of Mr. Taylor's specialties seems to have been coffins. Of course these (durned) things are necessary, and somebody had to make them then as well as now — even if they didn't cost as much. It wasn't a racket then — it was only a community service that one good man did for his neighbors, and didn't think it his right to take the gold fillings out of the body's mouth either. He made small ones and large ones, "coffins with glasses," "coffins with glass windows," and "coffins with lining and initials from his father, by agreement." I asked Bill Geiger whether Colonial Williamsburg has any examples of the first coffins with "windows" (that damnable barbarous, savage custom of looking at the remains) and he answered that they had iron window coffins in the last quarter of the 19th century, but as to wooden ones he couldn't say. So here we have definite records of their Yankee manufacture as early as 1806. Pine coffins with glasses ran about $3.25 and if you wanted your Father's design for initials, the price jumped way up to $2.92, BUT without a window to see what he looked like. Today — oh, well, skip it. I'm going to have one of the Taylor variety and have EFR. run me down into the woods in the old 1830 Ford station wagon and bury me under a stone wall; the one in the deed that reads: — "a pile of stun NE. by SE. from Centre street at intersection."

To complete the Taylor portrait, let me jot down just a few more of his odd jobs — Gee, but I'd like to have that man around here 7 days a week —:

"To work on a ladder & stuff." (Stuff, you may remember, was used for lumber, timber and unfinished wood.)

To a pair of temples (probably what the ironworker today calls templates.)

Painting a whippletry — .10c Putting on small chair rockers .21c

Circular boards for window curtains $1.28. Trundlebed or bunk $1.50

Small board chair .84c. (Somewhere today an antique dealer may have such a chair: solid seat and back of pine with square tapered posts — or perhaps turned posts — and it may be labeled 17th century wainscote chair?)

Two ballot boxes $1.34

Spinning machines for the Duck Factory — $16.00 (WHY didn't he make a sketch of these?)

Pattern for the schoolhouse stoves .50c Patterns for little wagon wheels .30c"

Candlesticks, kitchen tables, breakfast tables, dining tables, mirrors — and so from bedroom to kitchen to barn, his imagination planned the work for his tools.

Such a man today would starve before he had written the first page of his records. Imagine the Duck Factory of 1956 calling in a mechanic to "fix a loom for spring shuttles," "alter shuttles" and "mend a spinning head," at .84c a visit. Imagine this same man stepping into the factory and arresting the manager for attacking a factory girl! Imagine taking some of your valuable engravings or prints to have them framed @ .38/ each. Imagine — no, you'd better not. One of the Unions might drop into the Chronicle office and make a mess.

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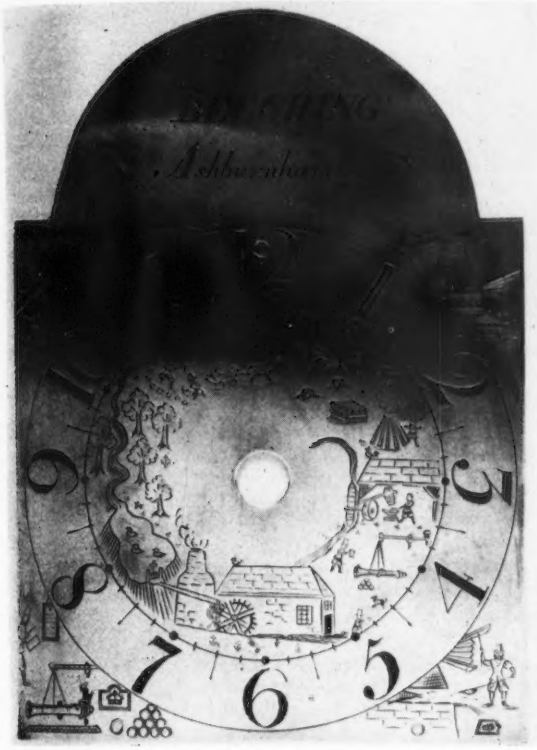
Unusual Clockface

By J. Sanger Atwill



During the course of the meeting this past summer at Northampton, Massachusetts, I happened to be discussing the Saugus Restoration with a group of members of the Early American Industries Association when one of the Williamsburg contingent mentioned an unusual clock face that Colonial Williamsburg had purchased for its watch and clock making exhibition at the Silversmith Shop. This extremely interesting face is illustrated here in the *Chronicle* and depicts the various phases of iron mining and manufacture. Because these operations are so interesting and the clock face is unusual in that it shows these operations, I volunteered to epxlain the operations shown on the clock face.

The dial has the iron making process engraved on the brass face.

To follow the sequence of the process one must begin with the digging of Bog Ore from swamp land. Shown are two men. One pushed a wheelbarrow while the other wields a pickaxe, two other men swing pickaxes while a patient horse or mule stands hitched to a cart of ore. To the right and slightly below, a man swings a tremendous broadaxe and is in the process of cutting down a tree to make into charcoal. Nearby four stumps, wild flowers, and stocked wood lead us to a man tending a charcoal kiln from which clouds of smoke rise.

Now look to the upper right hand corner which shows a Stone Furnace Stack with a man pushing a wheelbarrow of ore across a charging bridge to dump ore in the top of the furnace. The foreground shows casting beds while in the rear a man pulls a rope operating the bellows which is usually powered by a waterwheel.

Just below the charcoal kiln is shown a forge where a watercourse operates a waterwheel which raises a hammer that drops on an iron bar held on the anvil by a man. This results in the removal of certain impurities and produces wrought iron. The small rooster on the roof peak of the forge and the timber construction reminiscent of a covered bridge is of interest.

Below are stilliards weighing a cannon while a tally man stands by and a stack of cannonballs resting beneath the cannon. A dog can be seen running gaily around with tail curled up and a man appears to be throwing a ball for him.

The lower right hand corner shows a man in leather doublet and pantaloons pulling a rope to a bellows with one hand apparently using a long handle ladle with the other. A tuyere pipe indicates air blasts, and molten iron pours out in a direct process of casting a Fireback with a crown design. The completed fireback is shown in the lower left corner where a man keeps a tally, and stilliards suspend a cannon. Also a casting bed and a stack of cannon balls are shown.

On the inner dial below the group gathering bog ore, trees and flowers surround a river water supply that empties into a storage basin held in check by a sluice gate. This in turn feeds water to a pitchback or breastwheel turning on the side of a building on the end of which is a stone stack belching smoke. This apparently indicates a slitting mill. The engraver of the dial must have been a lover of nature as he does not fail to show flowers growing by the slitting mill, a bird sitting on the ridge pole, ducks swimming in the storage basin and a dog running through the trees. The final engraving in the upper left corner shows two cannon with two men firing one cannon at a target. The blast shows fire, smoke, and cannon ball emerging from cannons throat.

It is interesting to note that all the iron workers are wearing high hats, leather doublets and pantaloons which I assume was actually somewhat more formal than usual. Their costumes appear to be of late 17th century design.

The name Beeching, Ashburnham most likely indicates the maker of the clock works and the town Ashburnham, England. Unless it was used on a tall clock which was wound by pulling on chains this dial was probably never used as no winding holes appear.

Any additional information on this clock face would be welcomed by the writer or by Colonial Williamsburg.

Since Mr. Attwill has written the above article concerning the iron works clock face, some additional information has come to light in regards to it. The Editors have been able to secure this information from Mr. Edward Hamilton, 145 Dudley Lane, Milton 86, Massachusetts. Mr. Hamilton indicates that this particular iron works clock dial was photographed and pictured in the Transactions of the Newcomen Society, Volume I, 1920-21 and is either the clock illustrated in this article or one almost exactly like it. The Transactions of the

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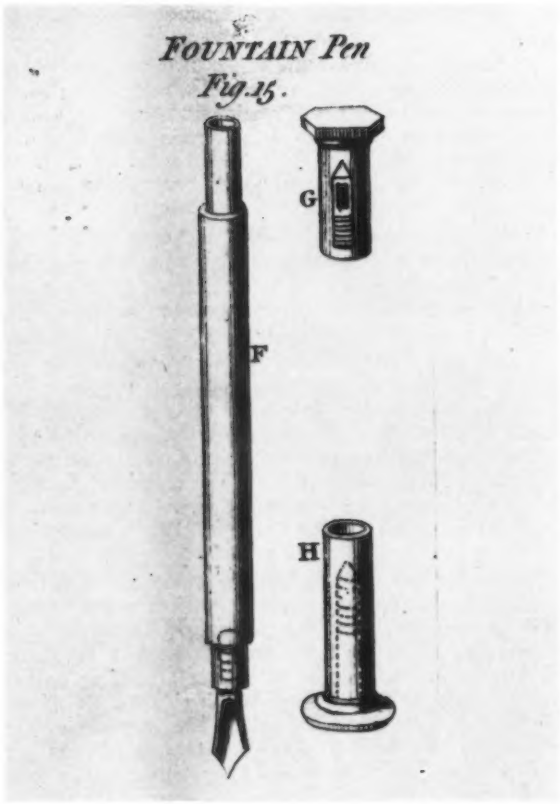
Fountain Pen and Pencils



Chambers Cyclopædia, London, 1769 affords us with an excellent description of an early fountain pen.

He writes: " . . . is a sort of pen contrived to contain a great quantity of ink, and let it flow, by gentle degrees, so as to supply the writer a long time without a necessity of taking fresh ink." In the figure above the fountain-pen "consists of divers pieces, F. G. H. of brass, silver, &c. whereof the middle piece F carries the pen, which is screwed into the inside of a little pipe; which, again, is soldered to another pipe of the same "bigness", as the lid G; in which lid is soldered a male screw, for screwing on the cover; as, also, for stopping a little hole at the place, and hindering the ink from passing through it: at the other end of the piece F is a little pipe, on the out-side whereof the top cover H may be screwed. In the cover there goes a porte-craion, to be screwed into the last-mentioned pipe, in order to stop the end of the pipe into which the ink is to be poured by a funnel. To use the pen, the cover G must be taken off, and the pen a little shaken, to make the ink run more freely."

Chambers defines a Port-Craion, as "a pencil-case, an instrument serving to inclose a Pencil, and occasionally also used as a handle for holding it. It is usually four or five inches long, and contrived so that the pencil may be slid up and down it by means of a spring and button. Its outside is filed into eight sides or faces, whereon are drawn the sector lines; its inside is round; sometimes it is made round or cylindrical both outside and within, and has its length divided into inches and parts of inches."

Lead Pencils

Chambers give black lead as a kind of mineral "of a black or rather of a deep shining blue colour, but soft and unctuous, insomuch that it has been used, instead of oil or soap, to prevent the friction of machines, found chiefly in England, . . It is much used for pencils, or crayons for designing." . . . "The German black lead pencils, and those which are hawked about among us, are prepared in this manner: their melting or softening, when held in a candle, or applied to a red-hot iron, and yielding a bluish flame, with a strong smell like that of brimstone, discovers their composition. Pencils of this kind are hard, and brittle, and cut or scratch the paper or wood instead of marking them. The true English pencils are formed of black lead alone, sawed into slips, which are fitted into a groove made of the softest wood, as cedar, and another slip of wood glued over them. These pencils, however, are of different quality, on account of different sorts of the mineral being fraudulently joined together in one pencil, the fore part being commonly pretty good, and the rest of an inferior kind. To avoid these inconveniencies, some take the finer pieces of black lead itself, which they saw into slips, and fix for use in port-crayons."

We find evidence of pencils and pens in early America. G. Duyckinck, at the Universal Store, at the Corner of the Old Slip-Market in New York advertised in 1768 that he sold Lead Pencils. (New York Journal or General Advertiser, May 5, 1768). A Wax-Chandler in New York, Abraham Bendix, lately from London, at the House of Mr. Jones Phillips, at the East Side of Pecks-slip, advertised that he "makes the best of black and red Lead Pencils, . . " among other items. (New York Mercury, March 4, 1765). Stephen Dwight of New York, advertised that he would teach drawing "in crayon, black and white chalk, Indian Ink and black Lead Pencil, in the quickest and best Manner. (New York Gazette, April 12, 1762). Francis Jerdone, Merchant of Yorktown, in the 1750's sold fountain pens. He affords us with an excellent comparison of the price of pens and pencils. His fountain pen sold for 1 shilling, 6 pence and lead pencils for 3 pence. Compare this with a silk handkerchief as cheap as 1 shilling 6 pence; cotton handkerchief at 1 shilling 3 pence; linen handkerchiefs at 1 shilling. Quill pens sold 25 for 1 shilling 3 pence; quire of paper at 9 pence; an inkpot at 4 pence; penknife at 4 pence, knit silk purse at 1 shilling 8 pence and shoe buckles at 1 shilling 3 pence. There is nothing new under the sun.

WHATSIT?

At the meeting of the Directors of the Early American Industries Association in October at Columbus it was decided to officially designate an unknown tool or implement as a WHATSIT. This will be the term to classify the objects in the future. Mr. Miner Cooper of Windsor, New York has written to the Editors in order to insure that this proper designation is called to the attention of the members of the Early American Industries Association.

The Chronicle

Early American
Industries Association, Inc.

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men, and other workers.

Communications regarding the contents of *The Chronicle* and back issues should be addressed to the Editors; suggestions for members to Joseph W. Rake; all other matters to the President. Address as here given.

DUES

The annual dues are payable on January 1st and are $5.00. The *Chronicle* is published quarterly with issues in February, May, August and November. The *Chronicle* is sent to all members without additional charge. Printed on the press of the *Virginia Gazette*, founded 1736, Williamsburg, Virginia.

NOTES

Mr. Edward Durell, of Columbus, Ohio, has notified us of a new museum in England that we feel might be of interest to our members. At East Riddlesden Hall, near Keighley, Yorkshire, an old wooden barn has been opened to the public by the National Trust and the interior is being developed as a museum for ancient farm implements and other relics. It is indeed interesting to note that other people are concerned with early tools and implements.

In order to make the *Chronicle* an interesting and informative source to all members, the Editors would like to have your suggestions as to the type of tools or manufactures that you are interested in. We would like to publish these requests in the hope that the members who have information concerning them will forward it for use. Please do not hesitate to criticize issues of the *Chronicle* for it is only through your comments and help in supplying information that we can make it a better publication.

The Editors have recently viewed a copy of the *Primer for Preservation: A Handbook for Historic Housekeeping.* This publication is a reprint of articles that appeared originally in *New York History* and *Antiques Magazine.* The publication should certainly be of interest to many of the members of the Early American Industries Association. The publication is available from The New York State Historical Association, Cooperstown, New York and from the National Trust for Historic Preservation, 712 Jackson Place N. W., Washington 6, D. C. at $1.00 per copy. There is a 20% discount for orders in the amount of 10 or more.

SPRING MEETING

The Editors of the Chronicle have had a number of comments and criticisms concerning the mailing of the Chronicle prior to annual meetings. In order to improve this situation the Directors at their last meeting at Columbus, Ohio in October authorized the editors to mail issues of the Chronicle prior to meetings at first class rates. Although the Editors are the first to admit that issues of the Chronicle have been behind the designated schedule for publication, certainly the fact that the publication has gone out as second class mail has been the cause of some of our difficulty. This new policy in relation to the mailing of the Chronicle will undoubtedly greatly improve this situation.

The annual spring meeting of the Early American Industries Association will be held at the Corning Glass Center, in Corning New York on June 7, 8, 9. Mr. John P. Fox, Manager of the Corning Glass Center will serve as program chairman for what will certainly prove to be an outstanding meeting. A full announcement of the program and plans for the meeting will be contained in the March issue of the Chronicle and supplemental mailings will be provided by the Corning Staff. Make your plans early and plan to be there.

Early American Cutlery

One of the earliest American publications that give us any information on the crafts and trades as practiced in this country in the first 50 years of the nineteenth century is the *"Panorama of Professions and Trades* or *Every Man's Book"*, by Edward Hazen. This publication deals specifically with some eighty-two craft or trade operations and has a small engraving depicting the shop of each and is an extremely fascinating book. The book was published in Philadelphia in 1845 by Uriah Hunt and Sons, 44 North Fourth Street. The Editors of the *Chronicle* have been going through this publication and have found a number of interesting descriptions of various craft operations as they were described in 1845. From time to time in coming issues of the *Chronicle* we will use one of these brief descriptions and we hope that they will prove interesting to our readers. The first article that we are running is on The Cutler. The following information is extracted directly from the publication.

1. Under the head of cutlery, is comprehended a great variety of instruments designed for cutting and penetration, and the business of fabricating them is divided into a great number of branches. Some manufacture nothing but axes; others make plane-irons and chisels; augers; saws; or carvers' tools. Others again, make smaller instruments such as tableknives, forks, pen-knives, scissors, and razors. There are also cutlers who manufacture nothing but surgical instruments.

2. The coarser kinds of cutlery are made of blistered steel welded to iron. Tools of a better quality are made of shear steel, while the sharpest and most delicate instruments are formed of cast steel. The several processes constituting this business may be comprised in forging, tempering, and polishing; and these are performed in the order in which they are here mentioned.

3. The general method of forging iron and steel in every branch of this business, is the same with that used in the common blacksmith's shop, for more ordinary purposes. The process, however, is somewhat varied, to suit the particular form of the object to be fashioned: for example; the blades and some other parts of the scissors are formed by hammering the steel upon indented surfaces called basses. The bows, which receive the finger and thumb, are made by first punching a hole in the metal, and then enlarging it by the aid of a tool called a break-iron.

4. The steel, after having been forged is soft, like iron, and to give it the requisite degree of strength under the uses to which the tools or instruments are to be exposed, it is hardened. The process by which this is effected is called tempering, and the degree of hardness or strength to which the steel is brought is called its temper, which is required to be higher or lower according to the use which is to be made of this particular instrument.

5. In giving to the different kinds of instruments the requisite temper, they are first heated to redness, and then plunged into cold water. This, however, raises the temper too high, and, if left in this condition, they would be too brittle for use. To bring them to a proper state, they are heated to a less degree of temperature, and again plunged into cold water. The degree to which they are heated, the second time is varied according to the hardness required. That this particular point may be perfectly understood, a few examples will be given.

6. Lancets are raised to 430 degrees Fahrenheit. The temperature is indicated by a pale colour, slightly inclined to yellow. At 450 degrees, a pale straw-colour appears, which is found suitable for the best razors and surgical instruments. At 470 degrees, a full yellow is produced, which is suitable for pen-knives, common razors, etc. At 490, a brown colour appears, which is the indication of a temper proper for shears, scissors, garden hoes, and chisels intended for cutting cold iron.

7. At 510 degrees, the brown becomes dappled with purple spots, which shows the proper heat for tempering axes, common chisels, plane-irons, etc. At 530 degrees, a purple colour is established and this temperature is proper for tableknives and large shears. At 550 degrees, a bright blue appears, which is proper for swords and watch springs. At 560 degrees, the colour is full blue, and this is used for fine saws, augers, etc. At 600 degrees dark blue approaching to black settles upon the metal, and this produces the softest of all the grades of temper, which is used only for the larger kinds of saws.

8. Other methods of determining the degree of temperature at which the different kinds of cutlery are to be immersed, a second time, in cold water, are also practiced. By one method, the pieces of steel are covered with tallow or oil, or put into a vessel containing one of these substances, and heated over a moderate fire. The appearance of the smoke indicates the degree of heat to which it may have been raised. A more accurate method is found in the employment of a fluid medium, the temperature of which can be regulated by a thermometer. Thus oil, which boils at 600 degrees, may be employed for this purpose, at any degree of heat which is below that number.

9. The grinding of cutlery is effected on cylindrical stones of various kinds, among which freestone is the most common. These are made to revolve with prodigious velocity, by means of machinery. The operation is therefore quickly performed. The polishing is commonly effected by using, first, a wheel of wood; then, one of pewter; and lastly, one covered with buff leather sprinkled with an impure oxide of iron, called colcothar or crocus. The edges are set with either hones or whetstones, or with both, according to the degree of keenness required.

10. Almost every description of cutlery requires a handle of some sort; but the nature of the materials, as well as the form and mode of application, will be readily understood by a little attention to the various articles of this kind which daily fall in our way.

11. A process has been invented, by which edge tools, nails, etc. made of cast iron, may be converted into good steel. It consists in stratifying the articles with the oxide of iron, in a metallic cylinder, and then submitting the whole to a regular heat, in a furnace built for the purpose. This kind of cutlery, however, will not bear a very fine edge.

12. The sword and the knife were probably the first instruments fabricated from iron, and they still continue to be leading subjects of demand, in all parts of the world. The most celebrated swords of antiquity were made at Damascus, in Syria. These weapons never broke

in the hardest conflicts, and were capable of cutting through steel armour without sustaining injury.

13. The fork, as applied in eating is an invention comparatively modern. It appears to have had its origin in Italy, probably in the fourteenth century; but it was not introduced into England, until the reign of James the First, in the first quarter of the seventeenth. Its use was, at first, the subject of much ridicule and opposition.

14. Before the introduction of the fork, a piece of paper, or something in place of it, was commonly wrapped around some convenient projection of the piece to be carved; and at this place, the operator placed one hand, while he used the knife with the other. The carver cut the mass of meat into slices or suitable portions, and laid them upon the large slices of bread which had been piled up near the platter, or carving dish, and which, after having been thus served, were handed about the table, as we now distribute the plates.

15. The knives used at table were pointed, that the food might be taken upon them, as upon a fork; and knives of the same shape are still common on the continent of Europe. Round-topped knives were not adopted in Paris, until after the banishment of Napoleon Bonaparte to Elba, in 1815, when everything English became fashionable in that city.

16. In France, before the revolution of 1789, it was customary for every gentleman, when invited to dinner, to send his knife and fork before him by a servant; or, if he had no servant, he carried them himself, in his breeches pocket. A few of the ancient regime still continue the old custom. The peasantry of the Tynd, and of some parts of Germany and Switzerland, generally carry about them a case, containing a knife and fork, and a spoon.

17. The use of the fork, for a long time, was considered so great a luxury, that the members of many of the monastic orders were forbidden to indulge in it. The Turks and Asiatics use no forks, even to this day. The Chinese employ, instead of this instrument, two small sticks, which they hold in the same hand between different fingers.

18. The manufacture of cutlery is carried on most extensively in England, at Birmingham, Sheffield, Walsall, Wolverhampton, and London. London cutlery has the reputation of being the best, and this circumstance induces the dealers in that city, to affix the London mark to articles made at other places. In the United States there are many establishments for the fabrication of the coarser kinds of cutlery, such as axes, plane-irons, saws, hoes, scythes, etc., but for the finer descriptions of cutting instruments, we are chiefly dependent on Europe.

MEMBERS MEETING

The Business Meeting of the members of the Early American Industries Association was held in the Victoria Room of the Deshler-Hilton Hotel on Saturday, October 13, 1956 following the banquet.

The meeting was called to order and presided over by Vice-President Minor Wine Thomas. Several messages and telegrams were received from members unable to attend and were read to the meeting. Mr. Fred J. Milligan, Vice-President of the Ohio Historical Society was introduced and officially welcomed the members of the Association. He spoke briefly on the Society and the work it is doing.

Due to the absence of the Secretary, the minutes of the June, 1956 meeting were read by John P. Fox, Jr. and approved. In the name of the Association, Mr. Erwin Zepp and his committee and Mr. Edward Durell were extended a special word of thanks for the fine job that had been done in planning an outstanding meeting.

Mr. John Still of the Ohio State Museum was introduced and awarded prizes to members holding lucky tickets. Prizes consisted of walnut trays, garden tools, maple syrup, note paper, and others.

Mr. Minor Cooper was thanked for an excellent job of planning a new "Whatsit" program. Every member attending participated in the event, and it was enjoyed by all. Six items will be published and six were definitely identified.

Mr. Joe Rake, Chairman of the Membership Committee, presented his report. He stated that membership in the organization is now approaching 900 and informed members that new application blanks were available for their use.

The meeting was then turned over to Mr. Erwin Zepp who introduced Mr. Robert Schmertz of Pittsburgh, Pennsylvania. After a short speech, Mr. Schmertz presented an informal and highly entertaining program entitled "Practical Application of Musicology to Early Americana".

The meeting was adjourned at 9:30 p.m.

ROPE MAKING

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piece of coarse cloth or flannel. The other hand regulated the quantity of fibres drawn from the bundle of hemp by the revolution of the yarn. The degree of twist depended on the velocity with which the wheel was turned, combined with the retrograde pan of the spinner. When the spinner had traversed the whole length of the rope walk (or sooner, if the yarns were not required to be so long) he called out and another spinner detached the yarn from the whirl and gave it to a person who placed it on a reel. Meanwhile, the second spinner attached his own hemp to the whirlhook. The hemp being dry and elastic, would instantly untwist if the yarn were now set at liberty. The first spinner, therefore, kept a tight hold on it, while the reeler wound it up and walked slowly up the walk so as to keep the yarn equally tight all the way. When the yarn was all wound up, the spinner held it until another was ready to follow it on the reel. Sometimes, instead of being wound on a reel as they were made, the yarns were laid together on large hooks attached to posts at the side of this walk until about four hundred were collected together. They were then coiled up in a haul or skein in which state they were ready for tarring.

The yarn being thus spun, was warped or stretched to be a given length in order that it might when formed into a strand, bear the strain equally. When the rope was to be tarred, that operation was usually performed upon the yarns immediately after being warped as the application of tar to the yarn prior to their combination was necessary to the complete penetration of the whole

substance into the rope. The most common method of tarring yarns was to draw them in hauls or skeins through the tar-kettle by a capstan. Sometimes the yarns were passed singly through the tar, being wound off one reel onto another and the superflous tar being taken off by passing the yarn through a hole surrounded with spongy oakum.

In making large cordage, from fifteen to twenty yarns were formed into a strand and three or more strands were afterwards combined into a rope. The twist of the strand was in the opposite direction to that of the yarns. In closing or laying the rope, three strands were stretched at length along the walk and attached at one end to separate but contigious hooks and at the other end to a single hook. They are twisted together by turning the single hook in a direction contrary to that of the other three. A piece of wood called a top, in the form of a truncated cone, is placed between the strands, and kept during the whole operation and was gently forced into the angle formed by the strands when they were united by the closing or twisting of the rope. As the rope shortened in closing, only one end of the apparatus was fixed, the other being on a movable sledge, whose motion up the rope-walk was capable of regulation either by suitable tackle attached to it or by loading it with weights. The top also was mounted on a sledge for closing large cordage and its rate of motion could be retarded in order to give greater firmness to the twist of the rope. Ropes formed in this method were said to be *shroud-laid,* or hawser-*laid.*

Those large ropes which were *cable-laid* were formed by the combination of smaller ropes twisted round their common axis. As cable-laid ropes were harder and more compact than others, this mode of formation was adopted for ropes to be exposed to the action of water, even though their thickness might not be very great.

Ropes formed by plaiting instead of twisting were made use of for some purposes in which pliability was especially needed. These ropes were supple and less liable to entanglement than those of the ordinary make. Such ropes were preferred for sash lines, clock-lines, etc., and generally where the rope has to pass over pulleys of small diameter. Flat ropes, which were used for mining purposes, were either formed of two or more small ropes placed side by side and united by sewing, lapping or interlacing with threat or smaller ropes; or of a number of strands of shroud-laid rope similarly united. In either case it was necessary that the component ropes or strands be alternately of a right hand and left hand twist, so that the rope might remain in a motionless state.

Ropes of iron-wire were formed in the same way as those of hemp with the wires taking the place of rope-yarns and being twisted into strands and combined into ropes, both hawser and cable-laid. The twisting was not as hard as in hemp or cordage; and all the wires were to be protected by an anti-corrosive composition or by coating them with tin and zinc. It was sometimes the practice to twist wires around a core, either of wire, hemp-cord, spun yarn or other material to form a strand and to lay such strands round a similar core when there were more than three strands in a rope. The information for this article was extracted from *Knight's Cyclopedia of the Industry of All Nations,* Printed in London in 1851.

ABNER TAYLOR

(Continued from Page 42)

for even thinking such things, let alone printing them. Bill has enough on his hands now.

Sewing chairs and spit boxes, cheese boards and wash boards, wagon seats and sleigh chairs — I just noticed a coffin with glass window AND handles — $2.84 — and another of cherry for $8.50, which again emphasizes the importance of the cost of the material — fire frames and patterns, shoemaker's bench and shoemaker's seat, trunks and chests — on, on into each night — cheerfully serving warrants, catching prisoners and "goaling" them from sunrise to sunset. What a man. Are there any of them left? Yes, in spirit, I think there are: I have some neighbors right here in North Middleboro who would prefer DOING and using their heads and working if it wasn't for our so-called modern, advanced scale of living. If you like button pressing and loafing, that's your business — and if I like Abner Taylor and his active, versatile, 'never a dull moment' way of life, that's mine. I wish he was around so that I could order my coffin, and pass out rigid, thumbing my nose at the Undertaker's Union.

UNUSUAL CLOCK DIAL

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Newcomen Society indicated that the clock formerly belonged to a certain Charles Dawson of Lewes and that the clock was probably made during the 18th century. Mr. Hamilton stated that the Transactions of the Newcomen Society had borrowed the clock from a publication, Hayden's "Chats on Cottage and Farmhouse Furniture" which was published by T. Fisher Unwin. This publication, however, did not give any information as to the clock face. Mr. Hamilton indicates that at the time the photograph was taken the clock had an alarm and a single hour hand which would lead him to believe that the clock was probably of early 18th century manufacture. Baillie's list of clockmakers indicates that there was a man named Beeching in Ashburnham who manufactured a "tall clock about 1750." It would seem that this is certainly the same man who manufactured the clock depicted in the photograph in this story.

INFORMATION WANTED

The editors would like any information as to the hand fabrication of thimbles. We also have run across, in a mid-eighteenth century colonial inventory, the mention of a "cotton-gin". Does anyone have any knowledge as to what it may have looked like and how it was operated? We would also like information, especially pictures, of early American matches. We are contemplating an article on this item in a future issue.